

DAILY CHEMICAL QUALITY CONTROL REPORT

DAY
DATE

S	M	T	W	TH	F	S
			09/06/17			

USACE REPRESENTATIVE:

Rodney Zion

PROJECT:

Bunker Hill Central Treatment Plant Operations

CONTRACT NO:

W912DW-16-C-0012

05/03/17 - 05/03/18

WEATHER

TEMP

WIND

HUMIDITY

Clear & Sunny X	Partly Cloudy	Overcast	Rain	Snow
0-32	32-50	50-70	70-90	90-103
Low	Moderate	High		
Low	Moderate	High		

1. Contractor/Subcontractor Personnel and Areas of Responsibility:

NAME	TRADE	HOURS	EMPLOYER	LOCATION & DESCRIPTION OF WORK
Gary Fulton	Lead Operator	8	Ferg. Cont.	CTP O&M, LWTPO, CQC Mgr, Lab Data Review, DMR
Steve Brunner	CTP Operator	8	Ferg. Cont.	CTP Operator, CTP O&M
Gary Coast	CTP Operator	8	Ferg. Cont.	CTP Operator, CTP O&M
Rod Zion	USACE COR		USACE	CTP Site
Ken Parsons	USACE QAR/PE		USACE	CTP Site,
Don Ferguson	Contract Mgr	1	Ferg. Cont.	CTP site, weekly conference call
Spencer Archer	O&M Manager		Amec F.W.	CTP Site
Steve Brunner	CTP Operator	2	Ferg. Cont.	Operator Overtime, Auto-Dialer Call Out 17:55
Gary Fulton	Lead Operator		Ferg. Cont.	CTP Site,
Gary Coast	CTP Operator		Ferg. Cont.	CTP Site, Overtime OMER #11 Silo A Dust Motor
Ryan McCune	Instrument Tech		Big Sky Ind.	CTP, Aeration Basin pH Meter
Mike Wright	Electrician		Fuse Electric LLC	CTP Site, Silo A Dust Collection System - OMER #011
Vacation and Holiday Man Hours:				
NAME	Explanation	HOURS		
			Ferg. Cont.	Non Exposure Hours, do not include with exposure hrs.

2. Work Performed:

Process quality control monitoring, floc mixing, lime system maintenance, and plant inspections as reported below.

Performed all required CTP daily process operations testing and sample collection.

Performed the daily inspection of the lime slurry holding tank. Operators observed no visual changes to the exterior of the tank.

Emptied lime system waste grit bin into CIA sludge waste pond.

Collected weekly samples from 006 outfall. Delivered samples to the lab for 24 hour rush analysis.

Performed maintenance inspection of FCI 299 skid steer.

17:55 Operator responded to auto-dialer call out alarm. KT flow increased from 760 gpm to approximately 2020 gpm.

Mine personnel provided notification that a new mine pool pump was installed. The new mine pool pump is pumping at an estimated rate of 1440 gpm at this time.

CTP operators will monitor the Clarifier turbidity levels closely for the next few days as flocculent dosage may need to be increased in response to the additional mine pool pump flow. Any flocculent dosage changes will be reported to Amec F.W. management.

3. Quality Control Activities Performed:

Performed twice daily cleanings of the Aeration Basin pH probe to prevent solids buildup.

Performed Aeration Basin discharge grab pH test to verify pH probe and meter readings 8.50 pH probe, 8.59 grab @ 05:40.

Performed Aeration Basin discharge grab pH test to verify pH probe and meter readings 8.47 pH probe, 8.50 grab @ 13:00.

DAILY CHEMICAL QUALITY CONTROL REPORT

DAY	S	M	T	W	TH	F	S
DATE					09/07/17		

USACE REPRESENTATIVE: Rodney Zion

PROJECT: Bunker Hill Central Treatment Plant Operations

CONTRACT NO: W912DW-16-C-0012 05/03/17 - 05/03/18

WEATHER	Clear & Sunny X	Partly Cloudy	Overcast	Rain	Snow
TEMP	0-32	32-50	50-70	70-90	90-103
WIND	Low	Moderate	High		
HUMIDITY	Low	Moderate	High		

1. Contractor/Subcontractor Personnel and Areas of Responsibility:

NAME	TRADE	HOURS	EMPLOYER	LOCATION & DESCRIPTION OF WORK
Gary Fulton	Lead Operator	8	Ferg. Cont.	CTP O&M, LWTP, CQC Mgr, Lab Data Review, DMR
Steve Brunner	CTP Operator	8	Ferg. Cont.	CTP Operator, CTP O&M
Gary Coast	CTP Operator	8	Ferg. Cont.	CTP Operator, CTP O&M
Rod Zion	USACE COR		USACE	CTP Site
Greg Zoeller	USACE QAR		USACE	CTP Site
Don Ferguson	Contract Mgr		Ferg. Cont.	CTP site, weekly conference call
Spencer Archer	O&M Manager		Amec F.W.	CTP Site
Steve Brunner	CTP Operator		Ferg. Cont.	Operator Overtime,
Gary Fulton	Lead Operator		Ferg. Cont.	CTP Site,
Gary Coast	CTP Operator	1	Ferg. Cont.	CTP Site, Overtime OMER #11 Silo A Dust Motor
Ryan McCune	Instrument Tech		Big Sky Ind.	CTP, Aeration Basin pH Meter
Mike Wright	Electrician	2	Fuse Electric LLC	CTP Site, Silo A Dust Collection System - OMER #011
Vacation and Holiday Man Hours:				
NAME	Explanation	HOURS		
			Ferg. Cont.	Non Exposure Hours, do not include with exposure hrs.

2. Work Performed:

Process quality control monitoring, floc mixing, lime system maintenance, and plant inspections as reported below.

Performed all required CTP daily process operations testing and sample collection.

Performed the daily inspection of the lime slurry holding tank. Operators observed no visual changes to the exterior of the tank.

Emptied lime system waste grit bin into CIA sludge waste pond.

CTP operators removed the failed dust system A motor, transferred the mounting unit from the failed motor to the new motor and installed the new motor. The electrician performed electrical disconnects and new motor connections. Electrician tested the motor connections and the operators tested the new dust system motor. The second motor is not operating correctly.

The dust motor manufacturer has been contacted. #1 failed motor was delivered to the manufacturers repair rep for inspection.

Cleaned and inspected the KT flume and trash racks. Operators removed a small amount of wood debris from the tracks.

KT flow at this time is 2.73 MGD (1895 gpm) with a pH of 2.85. Mine pool pump is now pumping approximately 1135 gpm.

Performed weekly discharge sampling at the KT and the PTM outfall. PTM discharge flow is 7 gpm with a pH of 6.35.

CTP operating staff reviewed and discussed the current AQI level of 206. The AQI is considered unhealthy. Limited exposure to the fire smoke will be implemented.

Updated the monthly DMR to include the recent 006-09-04-17 lab data. Lab data is attached.

Flocculent dosage is currently 1.50 ppm due to the increased KT flow from 760 gpm to 1895 gpm.

3. Quality Control Activities Performed:

Performed twice daily cleanings of the Aeration Basin pH probe to prevent solids buildup.

Performed Aeration Basin discharge grab pH test to verify pH probe and meter readings 8.44 pH probe, 8.41 grab @ 05:45.

Performed Aeration Basin discharge grab pH test to verify pH probe and meter readings 8.53 pH probe, 8.58 grab @ 13:00.

Bunker Hill Central Treatment Plant
Daily log September 2017

c:\1\CTP\procedure\Draft DMR 09 2017.qf

GPM	2086	09-07-17	op GF, GL, SB	
Weather				
Time	06:00	006 Flow	1963,000	
PH		Aeration Clarifier	006	
	05:45	844/841	8.22/8.09	7.00/7.40
	13:00	853/858	8.20/7.91	7.28/7.50
Turbidity		Clarifier	006	
	05:50	0.42	0.38	
	13:10	0.38	0.40	Sludge Pump OFF
Specific Gravity		Time	SG	
	06:00	1056	06:16	08:16
Flow and 24 hr	12:00	1041		
Clarifier	36.4/82	Time	53	2268.5
Line	SG 1064 % 10.0	46.0	See 114/35	
S.I.D	13.8 B	16.3		
Time	10:45	Kellogg Turn	# 5	
KT	09-07-17 (HLL ₂)	Pb	24 cel	nr
KT	09-07-17	TSS	PL	
Flow	2.73 mgd (1895 gpm)	PH	2.85	Tak 8,810,610 gal
Time	10:30	PTM Discharge	# 6	79 gpm
Sample	PTM - 09-07-17	HLL ₂	Pb	24 cel
	PTM 09-07-17	TSS	PL	
QC	09-07-17	HLL ₂	PL	24 cel
QC	09-07-17	TSS	PL	
AOL	206 - unhealthly	-	1895-760	
2000	1400 - 620	standing for	(1135 gpm)	

GPM	1822	09-08-17	op: GF, GL	
Weather		P Cloudy - 60°-85°		
Time	06:00	#07 006 Flow	2680, 800	
Sample	006 - 09-08-17	HLL ₂	Pb	24 cel
	006 - 09-08-17	TSS	PL	
PH's		Aeration Clarifier	006	
	05:50	842/835	8.26/8.22	7.07/7.42
	13:00	8.39/8.35	8.32/8.06	7.34/7.28
Turbidity		Clarifier	006	
	05:55	0.70	0.46	
	13:05	0.55	0.51	Sludge Pump
Specific Gravity		Time	SG	ON OFF
	05:30	1.059	06:15	-08:15
Flow and 24 hr	12:35	1.036		
Clarifier	36.4/81	Time	570	
Line	SG 1064	8.10 % 4.9	See 157/35	
KT	mine pool	Pump cut	1135 gpm	Flow 1.5 gpm
H	13.6 B	16.3		

GPM	800-750	09-05-17	LF 58.6C	op.
Weather	clear	60°-90°		
Time	06:00	006 flow	1069400	
PH's	Time	Aer.	CL.	006
	05:55	850/854	820/856	694/725
	13:00	860/845	825/849	694/723
Turbidity	Time	CL.	006	
	05:50	0.40	0.30	
	13:10	0.50	0.43	
Specific Gravity	Time	SC	ON	off
	05:45	1.037	06:20	07:20
	12:30	1.031		
Fluc AM	24 PM	12		
CL Staff	.50	temp 54.0	pond	2268.5
Line SG	1.064	10.0	5.3 sec	275/50
Slb A	14.6	B 16.3		

GPM	765	09-06-17	op. GF 58.6C
Weather			
Time	05:50	#4 006 flow	1087,000
006	temp	6.8°C	7.98
Sample		006-09-06-17 (HNO3)	pb, zn, cd, mn
		006-09-06-17 TSSaph	
PH's	Time	Aer.	CL. 006
	05:40	850/849	810/790 6.88/7.37
	13:00	847/850	815/805 6.99/7.21
Turbidity	Time	CL. 006	
	05:45	0.46	0.38
	13:15	0.42	0.40
Specific Gravity	Time	SG	ON off
	05:35	1.039	06:15 07:15
	12:55	1.032	
Fluc AM	24 PM	12	
CL-staff	.50	temp 55	pond 2268.5
Line SG	1.063	9.8	6.8 sec 238/25
Slb A	14.1	B 16.3	
Call out	17:55	Line Feed	close time Low
Set close time	at 165 ^{sec}	open time	at 30 sec.
1850 to 2100	gpm	(1260 gpm pump)	



www.svl.net

One Government Gulch - PO Box 929

Kellogg ID 83837-0929

(208) 784-1258

Fax (208) 783-0891

AMEC Foster Wheeler (CA)
10940 White Rock Rd, Suite 190
Rancho Cordova, CA 95670

Project Name: Bunker Hill 2017 - BHCTPWork Order: **X7I0045**

Reported: 18-Sep-17 12:28

Client Sample ID: **KT-09-04-17**SVL Sample ID: **X7I0045-01 (Water)****Sample Report Page 1 of 1**

Sampled: 04-Sep-17 07:35

Received: 05-Sep-17

Sampled By: SB

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Metals (Total Recoverable--reportable as Total per 40 CFR 136)										
EPA 200.7	Cadmium	0.240	mg/L	0.0020	0.0004		X737018	AS	09/18/17 09:31	
EPA 200.7	Lead	0.575	mg/L	0.0075	0.0026		X737018	AS	09/18/17 09:31	
EPA 200.7	Manganese	36.4	mg/L	0.0080	0.0025		X737018	AS	09/18/17 09:31	
EPA 200.7	Zinc	118	mg/L	0.100	0.031	20	X737018	AS	09/18/17 09:34	D2
Classical Chemistry Parameters										
SM 2540 D	Total Susp. Solids	39.0	mg/L	5.0	0.0		X736271	PRM	09/08/17 13:05	R1B
SM 4500 H B	pH @18.3°C	2.82	pH Units				X736273	DKS	09/11/17 07:42	H5

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director



www.svl.net

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AMEC Foster Wheeler (CA)
10940 White Rock Rd, Suite 190
Rancho Cordova, CA 95670

Project Name: Bunker Hill 2017 - BHCTP

Work Order: **X7I0045**

Reported: 18-Sep-17 12:28

Client Sample ID: **KT-09-07-17**

SVL Sample ID: **X7I0045-02 (Water)**

Sample Report Page 1 of 1

Sampled: 07-Sep-17 10:45

Received: 05-Sep-17

Sampled By: SB

Method	Analyte	Result	Units	RL	MDL	Dilution	Batch	Analyst	Analyzed	Notes
Metals (Total Recoverable--reportable as Total per 40 CFR 136)										
EPA 200.7	Cadmium	0.108	mg/L	0.0020	0.0004		X737018	AS	09/18/17 09:38	
EPA 200.7	Lead	2.53	mg/L	0.0075	0.0026		X737018	AS	09/18/17 09:38	
EPA 200.7	Manganese	114	mg/L	0.0800	0.0490	20	X737018	AS	09/18/17 09:41	D2
EPA 200.7	Zinc	71.9	mg/L	0.100	0.031	20	X737018	AS	09/18/17 09:41	D2
Classical Chemistry Parameters										
SM 2540 D	Total Susp. Solids	431	mg/L	5.0	0.0		X736271	PRM	09/08/17 13:05	
SM 4500 H B	pH @19.4°C	3.06	pH Units				X736273	DKS	09/11/17 07:44	H5

This data has been reviewed for accuracy and has been authorized for release by the Laboratory Director or designee.

John Kern
Laboratory Director

**KELLOGG TUNNEL DISCHARGE
CENTRAL TREATMENT PLANT
MONTH: Sep-17
Data from SVL**

DAY	LEAD (Pb)		ZINC (Zn)		CADMIUM (Cd)		MANGANESE (Mn)		pH s.u.	006 FLOW	TSS		
	mg/L	lbs/day	mg/L	lbs/day	mg/L	lbs/day	mg/L	lbs/day	SVL Lab	mgd	mg/L	lbs/day	kg/day
1		5.33		1,093		2.22		337.2		1.11		361.3	163.8
2		5.18		1,063		2.16		328.1		1.08		351.5	159.4
3		5.20		1,066		2.17		328.9		1.08		352.4	159.8
4	0.575	5.17	118.0	1,060	0.240	2.16	36	327.1	2.82	1.08	39	350.4	158.9
5		5.09		1,044		2.12		322.0		1.06		345.0	156.5
6		5.22		1,070		2.18		330.2		1.09		353.8	160.4
7	2.530	41.38	71.9	1,176	0.108	1.77	114.0	1,865	3.06	1.96	431	7050	3197
8		56.58		1,608		2.42		2,550		2.68		9639	4371
9		56.16		1,596		2.40		2,531		2.66		9567	4339
10		53.99		1,534		2.30		2,433		2.56		9197	4171
11	0.664	13.68	68.9	1,420	0.106	2.18	111.0	2,287	3.12	2.47	96	1978	897.0
12		13.96		1,449		2.23		2,334		2.52		2019	915.6
13		13.72		1,424		2.19		2,294		2.48		1984	899.6
14	0.663	13.06	69.4	1,367	0.106	2.09	112.0	2,206	3.21	2.36	86	1694	768.1
15		14.39		1,506		2.30		2,430		2.60		1866	846.2
16		14.22		1,488		2.27		2,402		2.57		1844	836.5
17		14.10		1,476		2.25		2,382		2.55		1829	829.4
18	0.622	12.82	69	1,412	0.102	2.10	108.0	2,226	3.23	2.47	96	1979	897.4
19		13.70		1,509		2.25		2,379		2.64		2115	959.2
20		13.29		1,463		2.18		2,307		2.56		2051	930.1
21	0.633	12.31	69	1,340	0.100	1.94	110.0	2,139	3.30	2.33	81	1575	714.3
22		13.31		1,449		2.10		2,313		2.52		1703	772.5
23		13.52		1,472		2.14		2,350		2.56		1730	784.8
24		13.20		1,437		2.08		2,293		2.50		1689	765.9
25	0.626	12.72	65	1,318	0.098	2.00	105.0	2,132.7	3.17	2.43	96	1949.9	884.3
26		12.75		1,321		2.00		2,138.0		2.44		1954.7	886.5
27		12.59		1,305		1.98		2,111.7		2.41		1930.7	875.6
28	0.656	13.52	67	1,379	0.097	2.00	107.0	2,205.5	3.24	2.47	92	1896.3	860.0
29		13.36		1,362		1.98		2,178.7		2.44		1873.3	849.6
30		12.04		1,228		1.78		1,964.4		2.20		1689.0	766.0
Total	6.97	506	597	40,436	1	64	803	56,424	25	66	1,017	74,916	33,976
Sample Events	8	30	8	30	8	30	8	30	8	30	8	30	30
Daily Average	0.871	16.9	74.7	1,348	0.120	2.13	100.4	1,881	3.14	2.20	127	2497	1133

Notes:

$(X \text{ mg/L}) * (1 \text{ kg}/10^6 \text{ mg}) * (2.205 \text{ lbs/kg}) * (3.785 \text{ L/gal}) * (10^6 \text{ gal/Mgal}) * (Y \text{ Mgal/day}) = (X) * (Y) * (8.345) \text{ lbs/day}$

$(X \text{ lbs/day}) * (1 \text{ kg}/2.205 \text{ lbs}) = (X) / (2.205) \text{ kg/day}$

verified by Brian Johnson, 09/12/17